REMARKS

Favorable reconsideration of this application and the Office Action of June 13, 2007 are respectfully requested in view of the foregoing amendments and the following remarks.

Applicant wishes to point out that the USPTO has apparently entered the name of the first inventor incorrectly into the USPTO records. The correct spelling of the name of the first inventor is Karol Križanovič, as shown on the attached copy of the executed Declaration/Power of Attorney previously submitted to the USPTO, and also as indicated on the PCT documents from which this US national Phase Application originated. Therefore, it is respectfully requested that the Examiner advised the appropriate USPTO Department to correct the spelling of the name of the first inventor to "Karol Križanovič" in all the official USPTO records.

Claims 1 to 9 remain under consideration in this Application.

It is noted that the priority has been entered and the IDS accepted.

The objection to the Abstract has been obviated with the submission of the replacement Abstract.

The rejection of claims 1-9 under 35 U.S.C. 103 (a) as unpatentable over Alicot et al. (US 4,371,698) is respectfully traversed. It is respectfully submitted that the disclosure in this cited document does not disclose or render obvious the invention of Applicant's claims.

US Patent No. 4,371,689 Alicot et al. deals literally only with purification of 2-mercaptobenzthiazole (2-MBT hereinafter) in aniline (steps 1, 2, 3), this being only the final part of the whole preparation method, as claimed or described in the presented US patent application No. 10/579,319. The method according to US No. 4,371,689 consists of the following steps:

1. addition of aniline for crystallization to the raw product

2. filtration and washing

3. regeneration (thickening of filtrates from the crystallization)

Contrary to this, the method according to US patent application No. 10/579,319 includes the steps:

1. addition of aniline filtrates for crystallization to the raw product;

2. filtration and washing; and

3. **recycling the filtrates to various places of the technology so that the necessity of regeneration of the filtrates by thickening is eliminated**.

The exact steps of the present invention are:

a) crystallization of the 2-mercaptobenzothiazole raw product from an aniline solution,

b) dividing the liquid phase (F_K) from crystallization from step a) in three parts,

c) removing one part of the liquid phase (F_{K1}) from crystallization from step a) out of the process,

d) returning the second part of the liquid phase (F_{K2}) from crystallization from step a) into the reactor for preparation of the raw product and supplementing it with sulphur and carbon disulphide with respect to aniline,

e) final purification of the crystallized 2-mercaptobenzothiazole from step a) in the aniline liquid phase and separation of the pure 2-mercaptobenzothiazole,

f) using the third part of the liquid phase (F_{K3}) from crystallization from step a), supplemented with the liquid phase (F_R) from final purification from step e) and possibly with aniline for crystallization of a further batch of the 2-mercaptobenzothiazole raw product,

g) using the liquid phase (F_R) from final purification from step f), together with a part of the liquid phase (F_{K3}) from step e), possibly with aniline, for crystallization of the 2-mercaptobenzothiazole raw product,

h) repeating steps a) to g).

Preparation of 2-MBT and its purification is a complex process - from preparation of the raw product in a synthesis reactor through its purification in aniline to recycling the filtrates to the synthesis reactor - without the necessity of filtrates thickening.

The USPTO is respectfully requested to notice several important differences that have apparently been overlooked in formulating the rejection. Alicot et al. explicitly states in the example that aniline filtrates must be thickened by distillation and returned to a further purification operation. In the presently claimed invention in US patent application No. 10/579,319, a part of the filtrates is returned to the preparation of 2-MBT in the synthesis reactor and a part to the following purification operation - therefore, it is not necessary to thicken the filtrates.

From a simple balance of materials (mass balance), presented in Example 1 of the cited Alicot et al. US patent, it is apparent that into the purification operation, there are entered 400 g of raw mercaptobenzthiazole, 1000 g of liquid phase from the preceding purification operation, and at least 1100 g of aniline (moreover, the patentees explicitly state **multiple** washing by this amount in the example), thus, altogether 2500 g of substances. After filtration, 700 g of filtration cake is obtained (which is processed to 329 g of the product). There remain at least 1800 g of filtrates, consisting predominantly from aniline, **thus about 5-fold amount of the obtained product**.

Distillation of filtrates to obtain aniline for further purification operation is necessary in this process, which fact is not denied by the patentees. However, distillation is an energetically demanding operation, especially in the case of aniline because of its high heat of vaporization and boiling point. For industrial use, such technology would require additional investments into vacuum distillation plants. Also this might be the reason, why the invention in that patent had not been realized in practice despite the fact that it was filed 25 years ago - it is namely economically unbearable to regenerate multiple amounts of aniline considering the amount of the product.

Therefore, the aim of the presented invention was to develop such complex method of preparation and purification of 2-MBT, which would not require demanding regeneration of aniline filtrates. The method in question eliminates this long time persisting disadvantage (stripping off aniline filtrates from purification operations), which is an unobvious patentably distinct feature of the present invention.

Moreover, US Patent No. 4,371,689 only mentions a possibility of recycling the aniline filtrates into the synthesis reactor for preparation of the raw product, but it does not state it concretely in the example. On the contrary, examples in the present US patent application No. 10/579,319 are complex - they include preparation of mercaptobenzthiazole from the used aniline filtrates in a pressure reactor, purification of the raw product, separation of the used aniline filtrates and washing with pure aniline so that the necessity to thicken the aniline filtrates by distillation has been eliminated.

The disclosure in the Alicot et al. US Patent 4,371,698 does not teach or suggest the use of recycled liquid phase obtained from the purification stages into the stage for synthesis of raw product. Instead, in the Alicot et al. patent the liquid phase from the purification is introduced into a reactor, **but into the reactor destined for purification, not into the reactor for preparation (synthesis) of the raw product.** This follows from Example 1 (col. 4, lines 35-48of the cited patent. 1000 grams of the liquid phase from the prior purification operation are again introduced into a reactor where 400 g of reaction mixture taken from the reactor for synthesis of 2-MBT (line 46) are added under permanent stirring, **but into** the reactor destined for purification. The USPTO needs to note the existence of two reactors---one for synthesis and one for purification- and their different functions in the process.

There is no mention in Alicot et al. of any direct recycling of used (refined) filtrates into a synthesis reactor for 2-MBT production. On the contrary, according to Alicot et al. nothing returns to the synthesis reactor.

Furthermore, it is to be noted that the procedure of the present invention divides the primary filtrates from crystallization of the raw product into three parts

-recycling into the synthesis reactor of 2-MBT production;

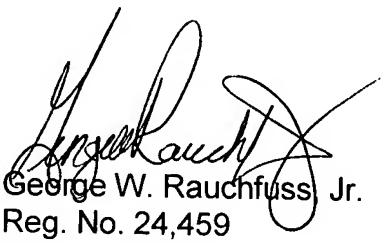
-recycling into further crystallization; and

-a part disposed outside the production (to maintain the balance of originating impurities). The claims recite these three steps and clearly further distinguishes the claimed invention from that disclosed in the Alicot et al. patent.

Therefore, the USPTO is respectfully requested to reconsider and withdraw the 35 U.S.C. 103(a) rejection of claims 1-9 over the Alicot et al. patent since it neither discloses nor suggest the steps of the claimed invention, or that the necessity of filtrates thickening could be eliminated.

It is respectfully submitted that the foregoing is a full and complete response to the Office Action and that all the claims are allowable for at least the reasons indicated. An early indication of their allowability by issuance of a Notice of Allowance is earnestly solicited.

Respectfully submitted,

By: 

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